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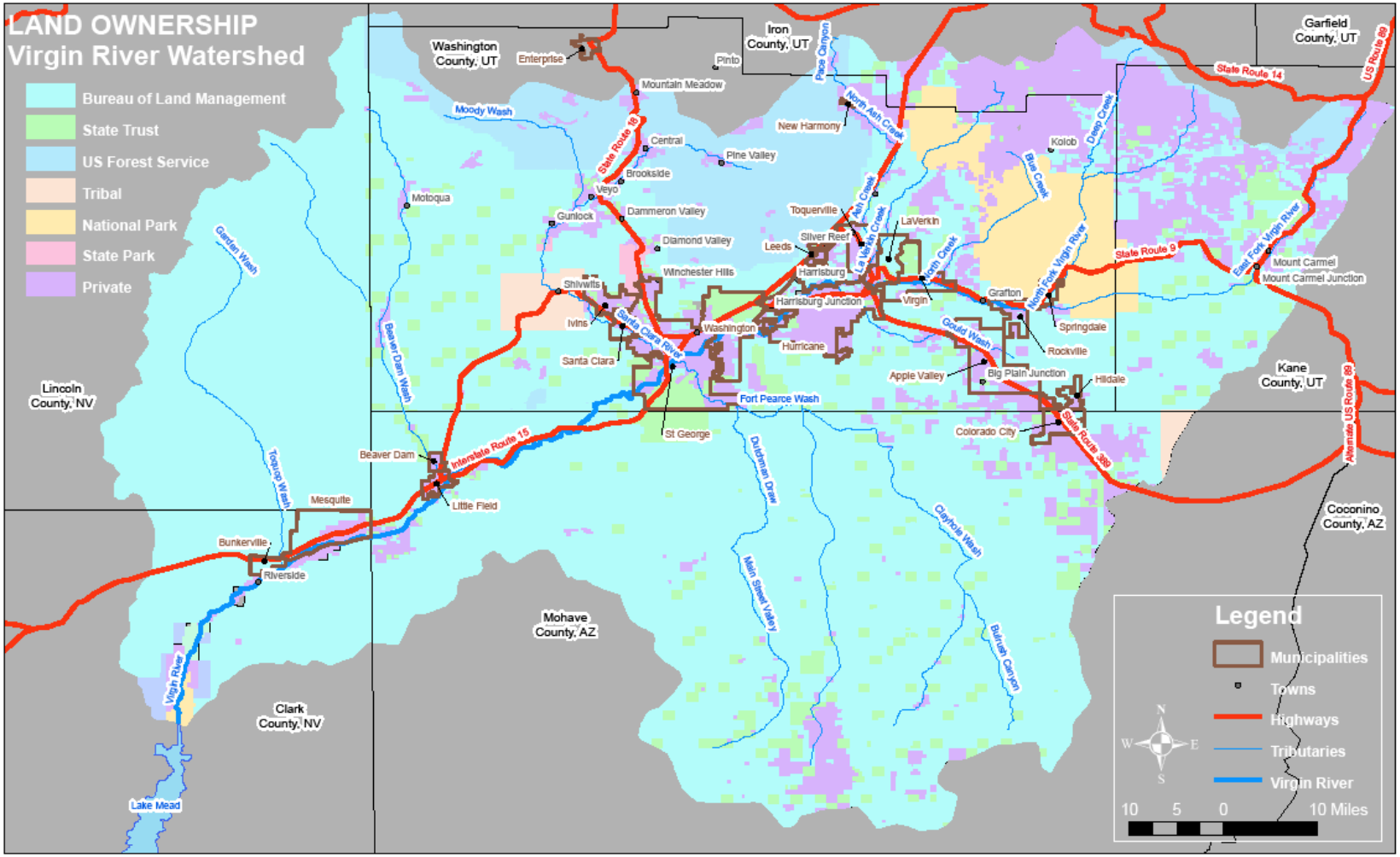
Virgin River Watershed Analysis



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Study Purpose

"at full federal expense, comprehensive analyses that examine multi-jurisdictional use and management of water resources on a watershed or regional scale" PL 109-03

Proposal: This collaborative effort will produce a watershed plan that assists stakeholders within the Virgin River Watershed in successful management of the river and related resources.

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Why Collaborate?

Challenge: Recognize that there are not enough resources available to get the job done.

Opportunity: Utilize the watershed framework to create a strategy that uses the skills and strengths of stakeholders, in coordination with multiple funding sources, to realize implementation of plans, and reach objectives.

http://www.epa.gov/owow/oceans/ndt/documents/9_4Jar

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Virgin River Watershed Issues

What are the biggest problems facing the watershed?

- Floodplain management
- Land use planning
- Invasive species
- Water availability
- River function (habitat, endangered species, channel maintenance)

How do you recognize successful watershed management?

- Cooperation-lack of conflict
- Floodplain management/mitigation
- Healthy functioning ecosystem
- Effective planning tools (monitoring)
- Knowing/understanding resources

During the next 10 years what could be done to improve watershed management in the Virgin River Watershed?

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Statements/Observations

Communication/Cooperation needs improvement.

Need useful tools and information to improve watershed management.

Borders, boundaries, and jurisdictions are barriers to collaboration.

Funding is insufficient to address issues within the watershed.

Don’t want just another report.

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Planning Goals

Established priorities for water resources planning and investment throughout the watershed…….

Collaboration to bring programs and resources together and provide integrated solutions……..

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Watershed Strategy Outline

Watershed Description

Watershed Issues

Goals/Objectives

- Management
- Invasive Species
- Floodplain management
- River Function
- Land Use Planning
- Water Resources (Quality/Supply)

Implementation Plan

- **Actions**
- **Costs**
- **Schedule**

Funding Sources

Evaluation Criteria

Communication Plan

Floodplain Strategy

Tamarisk Toolbox

Other tools ?

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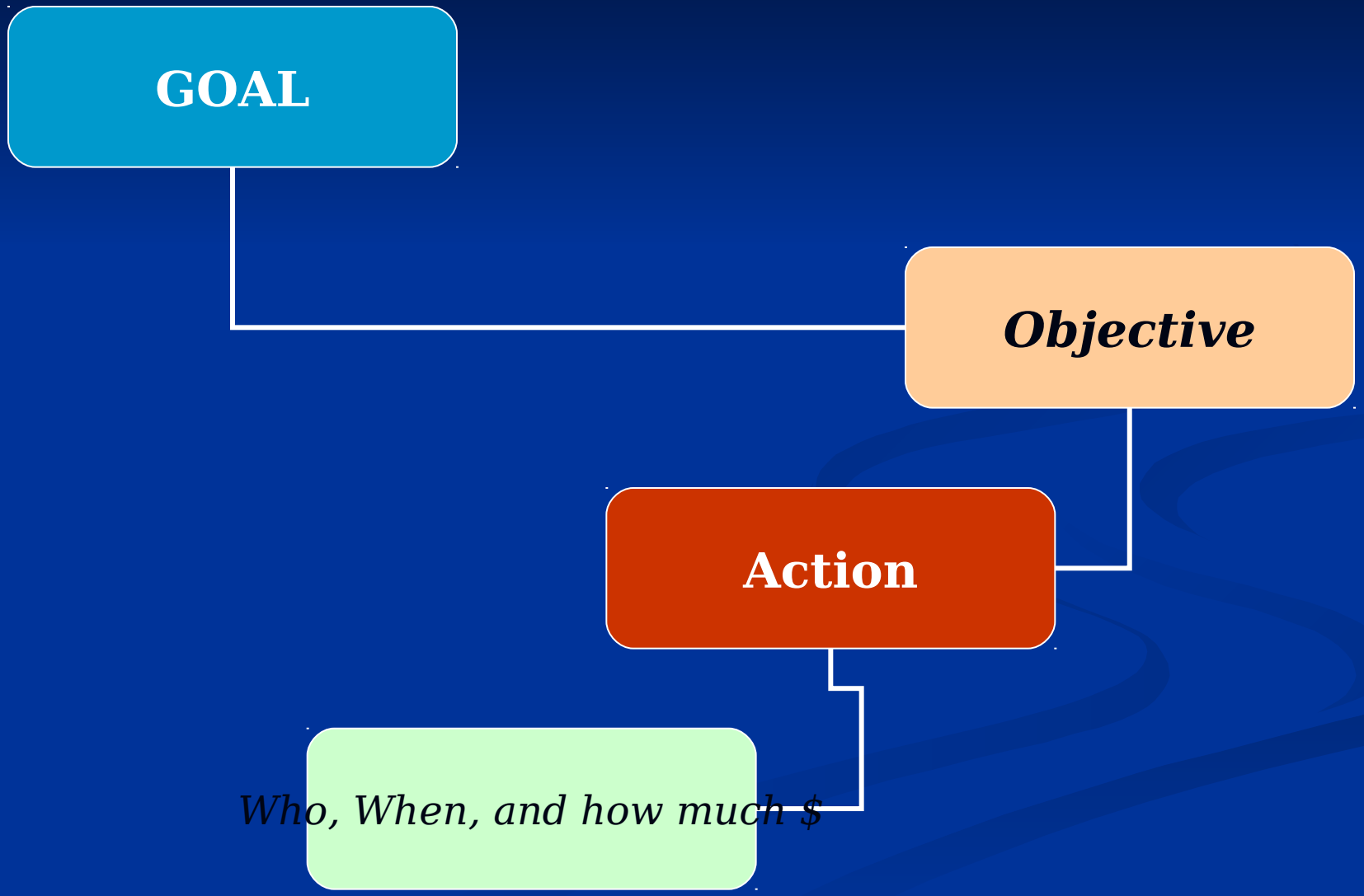
Watershed Plan



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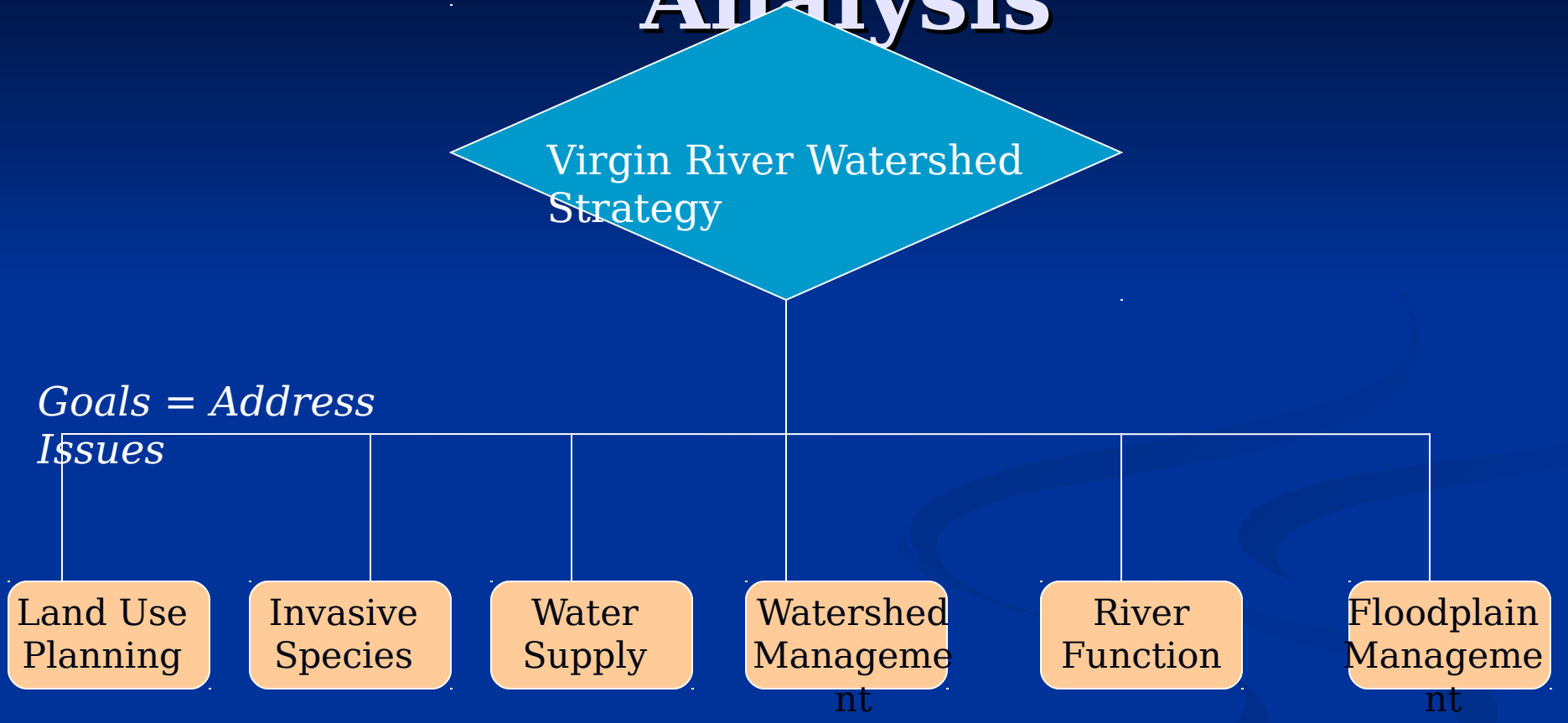
Virgin River Watershed Analysis



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Improve Watershed Management

Objectives = meet goals

- Establish a mechanism for ongoing collaborati throughout the watershed
- Improve communication between and among agencies/stakeholders
- Develop Plans to address priority issues

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Establish Mechanism for ongoing collaboration within the watershed

Actions = achieve objectives

- Establish List Serve to share information
- Develop a master calendar of activities
- Watershed groups host annual meetings within the watershed
-
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Improve communication between and among agencies/stakeholders

Actions = achieve objectives

- Develop Communication Plan that include contacts, roles and interests
- Establish (Arizona) watershed group to participate within watershed.
- Cross boundaries to address issues
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Develop Plans to address priority issues

Actions = achieve objectives

- Invasive species
- Floodplain management
- Water Supply
- Land Use Planning

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Land Use Planning

- Develop a planning toolbox for use by local entities
- Improve communication
- Incorporate non point pollution efforts into land use planning

** Relationship to Federal land use plans?*

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Develop a planning toolbox for use by local entities

- Model Ordinances
- Planning Tools
- Data Needs

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Improve Communication

See Watershed Management

See Floodplain Strategy communication plan

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Incorporate non point source efforts into local land use planning

National Management Measures to Control Non-point Source Pollution from Hydromodificati
www.epa.gov/nps/hydromod

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River Function

- Identify areas for potential habitat preservation, enhancement and restoration
- Develop streamlined permitting process for river maintenance and restoration
- Maintain natural river channel and floodplain dynamics where feasible
- Integrate conservation planning for sensitive species
- *Identify areas for potential nonstructural approaches to flood protecti*
- *Improve coordination of invasive species removal and control effort*
- *Improve communication*
- *Consider flood mitigation measures (Ft Pearce, Beaver Dam Washes*

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Identify areas for potential habitat preservation, enhancement and restoration

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Develop streamlined permitting process for river maintenance and restoration

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Maintain natural river channel and floodplain dynamics where feasible

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Integrate conservation planning for sensitive species

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Invasive Species

- Identify priority geographic areas and specie
- Coordinate Invasive Species activities across the watershed with other activities
- Involve the public in restoration efforts through outreach and education

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Identify priority geographic areas and species

- Prioritize species (*upland, riparian, aquatic*)
- Prioritize locations
-
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Coordinate Invasive Species activities across the watershed with other activities

- Establish working groups
- Develop management and prevention plans
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Involve the public in restoration efforts

- Educate recreation users of issues
- Conduct ecosystem related education
- Prevention

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Water Supply

- Evaluate surface/groundwater interaction
- Consider system wide water supply
- Consider drought/climate change
- Evaluate water quality

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Evaluate surface/groundwater interaction

- Develop basin wide model
- Evaluate groundwater (wells)
- FPMGMT Stream bank/riprap

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Consider system wide water supply

- Identify and implement potential for increased storage
- Identify and Implement conservation strateg
- Improve efficiency
- New water sources
- Water rights

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valuate/Improve Water Quality